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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,829	10/15/2003	Anand P. Narayan	TCOM0008	8473

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03/21/2007

EXAMINER

AHN, SAM K

ART UNIT

PAPER NUMBER

2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/686,829

Applicant(s)

NARAYAN ET AL.

Examiner

Sam K. Ahn

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on pre-amdt, 09/14/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-96 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 37-45 is/are allowed.
- 6) ☒ Claim(s) 1-26, 36, 46, 52, 53, 70 and 75-98 is/are rejected.
- 7) ☒ Claim(s) 27-35, 47-51, 54-69 and 71-74 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 030705
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 52-75 are objected to because of the following informalities:

In claim 52, line 1, "A computer readable storage medium" should be "A computer program stored in a computer readable storage medium"

Claims 53-75 directly or indirectly depend on claim 52.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-25 and 76-98 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it appears that the claim is reciting an apparatus claim of a computational component, however, the body of the claim appears to be reciting method steps; hence, it is unclear from the claim whether the claim is an apparatus or a method claim.

Regarding claim 76, it appears that the claim is reciting an apparatus claim of a logic circuit, however, the body of the claim appears to be reciting method steps; hence, it is unclear from the claim whether the claim is an apparatus or a method claim.

Claims 2-25 and 77-98 directly or indirectly depend on claim 1 or 76.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee US 6,173,008 B1.

Regarding claim 46, Lee teaches a receiver device (see Fig.2), comprising: a fast Walsh transform module (35,36 and 40) operable to perform a selected fast Walsh transform stage on a set of values (performing fast Walsh transform or Walsh transform on the values output from the descrambler 34, note col.3, lines 47-49 and 55-57); a comparator (100,104) operable to compare each value output from said fast Walsh transform module to a threshold (comparing the output of 40 with a threshold set by the previously received values, note col.5, lines 58-60); a first memory register operable to store element values output from said comparator; and a second memory register operable to store element values output from said comparator (memories 102 and 106 receiving the result of comparison of the difference of received value from the previously received value, note col.5, lines 59-64).

And although Lee teaches the first and second memories performing its respective function, Lee does not explicitly teach storing in the first and second memories of element values having a value less than or not less than said threshold, one skilled in the art at the time the invention was made would recognize such implementation. As Lee explains in an example of values for comparison in Fig.3A, the exemplary values range between 1 and 20. One skilled in the art would recognize that a value less than said threshold is stored when the received value is 5 and the previously received value or the threshold is 4, thus resulting in providing 1 as the result of comparison. Furthermore, one skilled in the art would also recognize that a value not less than said threshold is stored when the received value is 5 and the previously received value or the threshold is 1, thus resulting in providing 4 as the result of comparison. Lee teaches that the difference is stored in the memories (102 and 106). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to recognize that both circumstances when the difference value is less than or not less than the threshold is stored in its respective memories for the purpose of properly determining a received code word (note col.2, lines 13-16), which are partly based on the comparison and storing values as explained above.

4. Claims 1,19,25,26,36,52,53,70,75-77 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee US 6,173,008 B1 in view of Madhow et al. US 6,175,587 B1 (Madhow, cited in the IDS).

Regarding claim 26, Lee teaches a method comprising: receiving a signal stream (input to 31); despread said signal stream by applying a despread code (34, by despread with scrambling code, note col.3, lines 43-46); obtaining a first number of chip values from said despread signal stream, wherein said first number is equal to a number of chips included in a longest valid symbol (the number N being 8 Walsh code sequences, note col.3, lines 55-59); performing a fast Walsh transform on said first number of chip values to obtain a first set of transformed values, wherein said first result includes a first number of elements equal to said first number of chip values (35,36 and 40 wherein the number elements equal to N as illustrated in Fig.2 of having N multipliers 36 and N registers in 46); comparing a value of each of said first number of elements of said first set of transformed values to a threshold (comparing in 108 in Fig.3B with a threshold set by 106); and creating a first modified set of values (modified values of -13, +14 and +13 in Fig.3B), wherein for each element of said first set of transformed values: in response to a first result of said comparison, a value of said element is changed to a zero (in response to the comparison providing, for example +14, is changed to zero, S2); in response to a second result of said comparison, a value of said element is not changed to a zero (in response to the comparison providing, for example -13, is changed to zero, but changed to 1, S3).

Although Lee teaches receiving the signal stream, Lee does not explicitly teach wherein the signal stream comprises a plurality of channels.

Madhow teaches a receiver performing Walsh transform (210 in Fig.2) on a signal stream comprising plurality of channels (pilot channel and traffic channel, 302 and 304 in Fig.3). Hence, both Lee and Madhow teach a CDMA receiver canceling interference and attempting to properly receive transmitted signals wherein Madhow further suggests that the transmitted signals comprise pilot and traffic channels in order provide a separate channel from data or traffic channel by transmitting signals for system acquisition, idle mode hand-off and other functions (note col.3, lines 52-59) through the pilot channel.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the teaching of Madhow in the system of Lee of providing pilot and traffic channels for the purpose of providing a separate channel from data or traffic channel by transmitting signals for system acquisition, idle mode hand-off and other functions (note col.3, lines 52-59) through the pilot channel. The recitation in the preamble is not given patentable weight since the recitation recites the intended use of a structure and the body of claim does not depend on the preamble for completeness and the bodily limitations are able to stand alone.

Regarding claim 1, the claim is rejected as applied to claim 26 with similar scope.

Regarding claim 36, Lee further teaches wherein said changing a value of an element comprises replacing said value in a register (102, 106 provided to R1-R3).

Regarding claim 2, the claim is rejected as applied to claim 36 with similar scope.

Regarding claim 19, Lee further teaches wherein said threshold value is derived from a magnitude of a selected received channel within a signal stream from which said first set of magnitudes are obtained (from the same signal stream the thresholds 106 are derived with magnitudes for example 20 in Fig.3B).

Regarding claim 25, Lee further teaches comprising a logic circuit (50 in Fig.2 of a logic unit having circuitry of subtractors, registers).

Regarding claim 52, the claim is rejected as applied to claim 26 with similar scope.

Regarding claim 53, the claim is rejected as applied to claim 36 with similar scope.

Regarding claim 70, Lee further teaches wherein said threshold value is derived from a magnitude of a selected received channel within a signal stream from which said first set of magnitudes are obtained (from the same signal stream the thresholds 106 are derived with magnitudes for example 20 in Fig.3B).

Regarding claim 75, Lee further teaches comprising a logic circuit (50 in Fig.2 of a logic unit having circuitry of subtractors, registers).

Regarding claim 76, the claim is rejected as applied to claim 26 with similar scope.

Regarding claim 77, the claim is rejected as applied to claim 36 with similar scope.

Regarding claim 94, the claim is rejected as applied to claim 70 with similar scope.

5. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee US 6,173,008 B1 in view of Madhow et al. US 6,175,587 B1 (Madhow, cited in the IDS) and Li et al. US 6,668,011 B1 (Li).

Regarding claim 24, Lee in view of Madhow teaches all subject matter claimed, as applied to claim 1, however, does not explicitly teach comprising a computer readable storage medium containing instructions.

Li teaches a receiver comprising a computer (see 525 in Fig.6 and note col.41, lines 14-16). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the teaching of Li in the system of Lee in view of Madhow for the purpose of implementing a computer, which is well-known in the art as having a characteristic of a programmable system depending on user needs.

Allowable Subject Matter

6. Claims 37-45 are allowed.
7. Claims 3-18,20-23,27-35,47-51,54-69,71-74,78-93 and 95-98 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and overcome claim objections and/or 112, 2nd paragraph.
8. The following is a statement of reasons for the indication of allowable subject matter: present application discloses a receiver performing a fast Walsh transform on a received signal by storing, comparing and modifying the result. Prior art teaches all the limitations claimed. However, prior art does not explicitly teach wherein storing a channel estimate that exceeds and does not exceed zero, and does not explicitly teach performing a second fast Walsh transform along with the second storing, comparing and modifying steps.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

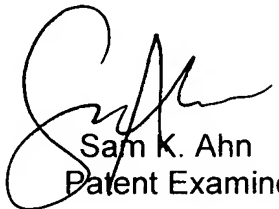
Sun US 6,295,311 B1 teaches a receiver comprising a Walsh transformer coupled to a comparator providing its results to a storage device.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam K. Ahn
Patent Examiner

3/18/07